Pearson BTEC Level 3 Nationals Certificate, Extended Certificate, Foundation Diploma, Diploma, Extended Diploma

Wednesday 7 May 2025

Afternoon (Time: 3 hours)

Paper reference **31761H**

Information Technology

UNIT 2: Creating Systems to Manage Information

Part A

You must have:
activity2.rtf, activity3.rtf, activity4.rtf

Instructions

- **Part A** and **Part B** contain the material for the completion of the assessment under supervised conditions.
- There are 40 marks for **Part A** and 26 marks for **Part B**, giving a total mark for the assessment of 66.
- **Part A** and **Part B** are specific to each series and this material must be issued only to learners who have been entered to take the assessment in the specified series.
- Learners **must only** have access to **Part A** during this examination session.
- This booklet should be kept securely until the start of the 3-hour supervised assessment period.
- **Part B** materials **must not** be accessed during completion of **Part A**.
- **Part A** and **Part B** should be submitted together for each learner.
- This booklet should not be returned to Pearson.
- Answer **all** activities.

Information

- The total mark for this part is 40.

Turn over ▶

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Instructions to Invigilators

This paper must be read in conjunction with the unit information in the specification and the *BTEC Instructions for Conducting External Assessments (ICEA)* document. See the Pearson website for details.

Refer carefully to the instructions in this booklet and the *BTEC Instructions for Conducting External Assessments (ICEA)* document to ensure that the assessment is supervised correctly.

The 3-hour **Part A** activities must be carried out under examination conditions.

Electronic templates for Activities 2, 3 and 4 are available on the website for centres to download for candidate use.

Learners must complete **Part A** on a computer using the templates provided and appropriate software. All work must be saved as PDF documents for submission.

Invigilators may clarify the wording that appears in **Part A** but cannot provide any guidance in completion of the activities.

Invigilators should note that they are responsible for maintaining security and for reporting issues to Pearson.

Maintaining security

- Learners must not bring anything into the examination environment or take anything out.
- Centres are responsible for putting in place appropriate checks to ensure that only permitted material is introduced into the examination environment.
- Internet access **is not** permitted.
- Learners' work must be regularly backed up. Learners should save their work to their folder using the naming instructions indicated in each activity.
- During any permitted break, and at the end of the examination, materials must be kept securely, and no items removed from the supervised environment.
- Learners can only access their work under supervision.
- User areas must only be accessible during the examination session and only by the individual learners.
- Any materials being used by learners must be collected in at the end of the examination.
- Following completion of **Part A**, all materials must be retained securely for submission to Pearson.
- **Part B** materials must not be accessed during the completion of **Part A**.

Outcomes for submission

Each learner must create a folder to submit their work.

The folder should be named according to this naming convention:

[Centre #]_[Registration number #]_[surname]_[first letter of first name]_PartA

Example: Joshua Smith with registration number F180542 at centre 12345 would have a folder titled

12345_F180542_Smith_J_PartA

Each learner will need to submit 6 PDF documents **and** their final database within their folder.

The 6 PDF documents should use these file names:

Activity 1: activity1_[Registration number #]_[surname]_[first letter of first name]
Activity 2: activity2_[Registration number #]_[surname]_[first letter of first name]
Activity 3: activity3_[Registration number #]_[surname]_[first letter of first name]
Activity 3d: activity3d_[Registration number #]_[surname]_[first letter of first name]
Activity 4: activity4_[Registration number #]_[surname]_[first letter of first name]
Activity 5: activity5_[Registration number #]_[surname]_[first letter of first name]

Instructions for Learners

Read the scenario, brief and activities information carefully.

Plan your time carefully to allow for the preparation and completion of all the activities.

Internet access is **not** allowed.

You will complete the activities under supervision and your work will be kept securely at all times.

You must work independently throughout the examination and must not share your work with other learners.

Your invigilator may clarify the wording that appears in **Part A** but cannot provide any guidance in completion of the activities.

Part B materials **must not** be accessed during the completion of **Part A**.

Outcomes for submission

You must create a folder to submit your work.

Each folder should be named according to this naming convention:

[Centre #]_[Registration number #]_[surname]_[first letter of first name]_PartA

Example: Joshua Smith with registration number F180542 at centre 12345 would have a folder titled

12345_F180542_Smith_J_PartA

You will need to submit 6 PDF documents **and** your final database within this folder.

The 6 PDF documents should use these file names:

Activity 1: activity1_[Registration number #]_[surname]_[first letter of first name]
Activity 2: activity2_[Registration number #]_[surname]_[first letter of first name]
Activity 3: activity3_[Registration number #]_[surname]_[first letter of first name]
Activity 3d: activity3d_[Registration number #]_[surname]_[first letter of first name]
Activity 4: activity4_[Registration number #]_[surname]_[first letter of first name]
Activity 5: activity5_[Registration number #]_[surname]_[first letter of first name]

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Part A Brief

You are advised to spend 10 minutes reading the scenario and the activities you are to complete.

You may make notes and/or highlight information to use in the completion of the documents you need to produce for your activities.

Scenario

You have been asked to create a database for Narisha.

Each Saturday, Narisha organises a 5k run around Suncaster Park.

The database will record information about the runs.

For each run, volunteers stand at positions around the park, for example the first bend.

Attendance of the assigned volunteers is recorded after each run.

Each position needs a specific number of volunteers. The minimum number of volunteers is one and the maximum number of volunteers is three.

Some runs have a social meet up afterwards.

An extract of the data Narisha would like to record is shown in **Figure 1**.

Run ID	Run Date	After Run Meet Up?	Volunteer ID	Position ID	Volunteer Last Name	Volunteer Telephone	Position	Position Volunteers Needed	Date Of Birth	Volunteer Attended?
104	26/04/2025	Yes	1	1	Charlton	01134960894	Start and finish	3	01/03/1971	Yes
104	26/04/2025	Yes	2	1	Warwick	01144960661	Start and finish	3	15/03/1984	Yes
104	26/04/2025	Yes	4	1	Smith	01134960485	Start and finish	3	06/05/1967	No
104	26/04/2025	Yes	6	2	Taylor	01134960249	First bend	1	13/05/1972	Yes
104	26/04/2025	Yes	7	3	Bhat	01144960133	Bottom of the hill	2	15/07/1971	Yes
104	26/04/2025	Yes	9	3	Morris	01164960104	Bottom of the hill	2	02/05/1972	Yes
105	03/05/2025	No	3	1	Bewick	01144960480	Start and finish	3	22/08/1993	Yes
105	03/05/2025	No	4	2	Smith	01134960485	First bend	1	06/05/1967	No
105	03/05/2025	No	5	1	Islam	01154960208	Start and finish	3	27/07/1970	Yes
105	03/05/2025	No	8	3	Guy	01154960406	Bottom of the hill	2	27/08/1973	No

Figure 1

Part A

You must complete ALL activities within Part A.

Produce your documents using a computer.

Save your documents in your folder ready for submission using the formats and naming conventions indicated.

Activity 1: Database Relationships Screenprint (45 minutes)

Study the data extract provided in **Figure 1**.

Create an efficient database structure that:

- minimises data duplication
- accepts the data provided
- uses recognised naming conventions
- ensures data integrity.

Ensure you use **all** and **only** the fields shown in **Figure 1**.

Screen print your database relationships.

Save your database relationships screenprint as a PDF in your folder for submission as **activity1_[Registration number #]_[surname]_[first letter of first name]**

You are advised to spend 45 minutes on this activity.

(Total for Activity 1 = 8 marks)

Activity 2: Table Structures and Validation (45 minutes)

Create efficient table structures based on Activity 1 and the data shown in **Figure 1**.

The table structures must use suitable validation to meet these requirements:

- a record for a new volunteer will not save if the volunteer's telephone number is not present
- a record for a new volunteer will not save if the volunteer's telephone number is not in the correct format
- a record for a new position will not save if the number of volunteers needed is below the accepted range
- a record for a new position will not save if the number of volunteers needed is above the accepted range
- a record assigning a volunteer to a position for a run will not save if the position ID is invalid
- a record assigning a volunteer to a position for a run will not save if the volunteer ID is invalid.

Input the data given in **Figure 1** into your relational database.

Evidence your table structures and validation as screenprints using the given **activity2.rtf** template.

Display your screenprints to show:

- the design view of each table showing the structure, including the fields and data types
- validation including one suitable example for each of these:
  - presence check
  - length check
  - value lookup **or** range check
  - table lookup
  - format check.

Save your evidence of the table structures as a PDF in your folder for submission as **activity2_[Registration number #]_[surname]_[first letter of first name]**

You are advised to spend 45 minutes on this activity.

(Total for Activity 2 = 8 marks)

Activity 3: Queries and Report (40 minutes)

Queries

(a) Create a query to display a list of volunteers for the start and finish position for the run on 03/05/2025. It must display only the volunteer ID, the volunteer last name and the position. It must be sorted by volunteer last name.

(b) Create a query to display a list of volunteers.

Calculate:
- the number of times each volunteer should have attended
- the number of times each volunteer did not attend when they should have attended.

Display the:
- volunteer ID
- volunteer last name
- number of times each volunteer should have attended
- number of times each volunteer did not attend when they should have attended.

Evidence your queries as screenprints using the given **activity3.rtf** template.

Your screenprints must show:

- the **DESIGN** view of the queries specified that you have created, including fields and criteria
- the **DATASHEET** view of the queries specified that you have created.

Report

(c) Once a month, Narisha celebrates the birthdays of the volunteers who have birthdays in that month.

For each month, calculate:

- the number of birthdays in that month
- the birth date of the oldest volunteer in that month
- the birth date of the youngest volunteer in that month.

For each month, display:

- the month number
- the volunteer ID(s)
- the volunteer name(s)
- the volunteer telephone number(s)
- the total number of birthdays in that month
- the birth date of the oldest volunteer in that month
- the birth date of the youngest volunteer in that month.

The report must fit on one page.

Evidence your report as screenprints using the given **activity3.rtf** template.

Your screenprints must show:

- the **DESIGN** view of the report you have created, including grouping and calculations
- the **DESIGN** view of any queries you have created and used with the report, including fields and criteria
- the **DATASHEET** view of any queries you have created and used with the report.

Save your query and report evidence as a PDF in your folder for submission as **activity3_[Registration number #]_[surname]_[first letter of first name]**

(d) Save your database report (not a screenprint) as a PDF in your folder for submission as **activity3d_[Registration number #]_[surname]_[first letter of first name]**

You are advised to spend 40 minutes on this activity.

(Total for Activity 3 = 12 marks)

Activity 4: Structure Testing (20 minutes)

Test the structure and the validation of your relational database using suitable test data (normal, erroneous and extreme as appropriate).

You must provide evidence of table level testing that proves:

1. a record for a new volunteer will not save if the volunteer's telephone number is not present
2. a record for a new volunteer will not save if the volunteer's telephone number is not in the correct format
3. a record for a new position will not save if the number of volunteers needed is below the accepted range
4. a record for a new position will not save if the number of volunteers needed is above the accepted range
5. a record assigning a volunteer to a position for a run will not save if the position ID is invalid
6. a record assigning a volunteer to a position for a run will not save if the volunteer ID is invalid.

Complete the test log to show how you have tested the structure and validation of your database using the given **activity4.rtf** template.

Save your test log as a PDF in your folder for submission as
activity4_[Registration number #]_[surname]_[first letter of first name]

You are advised to spend 20 minutes on this activity.

(Total for Activity 4 = 6 marks)

Activity 5: Structure Evaluation (20 minutes)

Evaluate your database structure and validation.

You should consider:

- how well your database structure has minimised data duplication
- how well your database structure meets these requirements:
  - volunteers stand at positions around the park, for example the first bend
  - attendance of assigned volunteers is recorded after each run
  - each position needs a specific number of volunteers. The minimum number of volunteers is one and the maximum number of volunteers is three
  - some runs have a social meet up afterwards.

Save your evaluation as a PDF in your folder for submission as
activity5_[Registration number #]_[surname]_[first letter of first name]

You are advised to spend 20 minutes on this activity.

(Total for Activity 5 = 6 marks)

TOTAL FOR PART A = 40 MARKS